Arman Atwal

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Education

San Diego State University — San Diego, CA
Bachelor of Science in Computer Science, 4.0 GPA — *Aug. 2022 – December 2025*

Experience

Computer Science Teaching Assistant — November 2022 – Present
San Diego State University — *La Mesa, CA*

- Provided personalized tutoring sessions, employing effective teaching methodologies to help students grasp complex computer science concepts.
- Mentored fellow students, and underclassmen as well, in tackling challenging computer science projects and assignments, offering guidance on algorithm design, code implementation, and debugging techniques.

Projects

Chess Engine | *Java, IntelliJ, Guava*
* Developed a simple AI using the minimax algorithm. The AI evaluated moves by recursively analyzing the game tree, considering different outcomes and selecting the move that maximizes its chances of winning.
* Programmed the logic for each chess piece's movements. This included determining the valid moves for pieces considering factors such as piece blocking, capturing opponent's pieces, castling, en passant, and promoting pawns.
* Implemented robust mechanisms to prevent illegal moves and maintain the integrity of the game. This involved systematically checking the current game board state, making sure that no moves violated the rules of chess.

Recipe Saving App | *Swift, SwiftUI, Xcode*
* Developed a feature-rich recipe saver app using Swift and Xcode, optimizing performance with advanced coding techniques like tab bar navigation, data modeling, and grid layout.
* Implemented a comprehensive recipe management system with Swift, allowing easy categorization and access to detailed information. Enhanced user experience with seamless image loading using AsyncImage.
* Created an intuitive interface for adding new recipes, streamlining input and storage with Swift. Designed visually appealing UI in Xcode for a smooth user experience.

MineSweeper | *Java, IntelliJ*
* Designed a user-friendly GUI using Java, implementing various UI elements, such as buttons, grids, and labels, to provide a visually appealing and intuitive game interface.
* Implemented functionality to toggle flags on/off and ensured the game's logic recognized flagged tiles, enhancing player decision-making and strategic gameplay.
* Developed an algorithm to calculate and update the adjacent numbers indicating the number of neighboring bombs, providing players with crucial hints to strategically uncover safe tiles.

Wordle Clone | *Python, PyCharm, PyGame*
* Developed a Wordle game using the Pygame library, implementing various game mechanics and graphical elements. The game provides an interactive interface where players can guess a five-letter word within six attempts.
* Designed and implemented a responsive user interface with intuitive letter selection and deletion functionalities. Users can input their guesses by selecting letters from an on-screen keyboard and deleting them if needed.
* Implemented an efficient word-checking algorithm that provides visual feedback to the player by highlighting correct letters in green, partially correct letters in yellow, and incorrect letters in grey.

Technical Skills

Proficient Languages: Java, C, C++, HTML/CSS, Assembly, JavaScript, Swift, Python
Developer Tools: Git, VS Code, Visual Studio, IntelliJ, Eclipse, Xcode, Mars, PyCharm, CLion, RubyMine, WebStorm
Experience With: Data Structures, Algorithms, Circuit Engineering and Design, Testing, and Operating Systems